

1. Objection to Drawings

The Examiner objected to the drawings under 37 C.F.R. § 1.83(a) stating that the drawings must show every feature of the invention specified in the claims. The Examiner contends that the drawings be amended to illustrate the cleaning of the bottle exterior.

Applicant respectfully traverses this objection for the following reasons. First, the proper standard for determining whether drawings are needed is whether drawings are necessary to understand the claimed subject matter. 35 U.S.C. § 113 states that an "applicant shall furnish a drawing where necessary for the understanding of the subject matter to be patented." This "necessary for understanding" standard for drawings is reiterated in 37 C.F.R. § 1.81(a). The drawings and written description describe in detail the mechanism for cleaning the bottle surfaces. Moreover, the specification further discloses that sterilizing agent may be applied to both the interior and/or the exterior of the bottle. Specification p. 8 lines 1-5. Provided this disclosure, one of ordinary skill in the art would clearly understand that both the interior and exterior bottle surfaces are sterilized by the present invention. Consequently, a drawing is not needed to convey sufficient understanding of this simple concept to one skilled in the art.

Notwithstanding the foregoing, FIG. 1 illustrates the spraying of the bottle exterior. As the bottle moves along the conveyor, spray from the nozzle can apply sterilizing agent to the bottle exterior as the bottle exterior moves adjacent the nozzle. See specification, page 7 lines 20-25. Accordingly, the drawing figures and the specification adequately describe the invention such that one of ordinary skill in the art is enabled to understand and practice the invention. In view of the foregoing, Applicant respectfully submits that the objection to the drawings be withdrawn.

2. 35 U.S.C. § 112 Rejections

Claims 1, 4, 16, 19, 29 and 32 were rejected under 35 U.S.C. § 112 ¶ 2 for being indefinite. The phrase "substantially eliminate" in claims 1 and 29 was objected to by the Examiner, as was the phrase "sufficiently sterile" which has been amended to "sterilized as desired." Support for this terminology is found in the specification at page

8 lines 6-10 and page 9 lines 1-5, for example. Moreover, one skilled in the art certainly understands such terminology as it is well recognized that there are levels or degrees of sterility.

The Examiner contends that the term "supersaturated solution" in claims 4, 19 and 32 is indefinite. This term has been changed to "supersaturated fog." Support is found at page 9, lines 7-10. One of ordinary skill in the art recognizes that "supersaturated fog" means that the fog has more liquid than can exist in equilibrium in the air at that temperature and pressure. Thus, such a condition promotes condensation of the supersaturated fog onto the bottle surface. Consequently, applicant respectfully submits that "supersaturated fog" is not indefinite.

In view of the foregoing, all of the claims particularly point out and distinctly claim that which Applicant regards as the invention. Applicant respectfully requests that the 35 U.S.C. § 112 rejections be withdrawn.

3. Prior Art Rejections

Claims 1-11, 13, 15-25 and 28-39 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,326,032 to Richter et al. (Richter); claims 12, 14, 26-27 and 40 were rejected under 35 U.S.C. § 103(a) as being obvious over Richter. Applicant respectfully traverses these rejections for the reasons set forth below.

Richter does not teach or remotely suggest introducing sterilizing agent onto the bottle surface in the form of discrete atomized particles (relevant to all claims). Nor does Richter teach or suggest introducing the sterilizing agent in the form of a fog, a vapor, a mist or an aerosol suspension (relevant to claims 6, 21 and 34). Richter merely discloses a sanitizing agent that is sprayed into a bottle. Richter, col. 4 lines 35-40, col. 10 lines 51-53. Richter teaches nothing more than Applicant states in the Background section of the present application regarding spraying. See page 1, line 24 to page 2, line 7. Richter has no disclosure whatsoever regarding the nature of the spray. In fact, Richter actually teaches away from the present claims. In Richter, the spray "floods" the bottle with sanitizer material. Richter, col. 11 lines 32-37. Alternatively, Richter circulates a liquid throughout a system, such as in a piping system

followed by draining. See, Richter at col. 9, lines 46-57. This stands in stark contrast to the present claims wherein sterilizing agent, in the form of discrete atomized particles (from about 1 millimicron to 1000 microns in diameter), forms a thin liquid film on the bottle surface. Moreover, as previously mentioned, Richter does not even remotely teach or suggest utilizing a fog, vapor, mist or aerosol suspension. Again, Richter's teaching of flooding and recirculating in a piping system followed by draining teaches away from using atomized particles or a fog, vapor, mist or aerosol suspension.

Nor does Richter teach or suggest a system or device for sterilizing bottles including an ultrasonic atomizer, fog generator, hydraulic atomizer nozzle or an air atomizer, or a corresponding method (relevant to present claims 5, 20 and 33).

Similarly, Richter fails to teach or suggest use of the condensation phenomenon, whether as part of a system, method or apparatus, in connection with sterilizing bottles, or anything else, for that matter (relevant to claims 3, 4, 8-10, 18, 19, 22, 23, 31, 32 and 36-38). The Examiner's reference to purported condensing conditions in Richter are not pertinent since Richter relies on a spray of bulk material so whether any condensation could occur it would be *de minimus* at most and would not be used to coat a bottle with a liquid sterilizing agent. Nor does Richter make any reference to condensation.

In addition, it is respectfully noted that Richter does not teach or suggest creation or use of "atomized liquid particles" or "an aerosol suspension" as asserted by the Examiner, relying on Richter at col. 4, lines 34-35 and the Figure. Richter at col. 4, lines 34-37 merely states: "In such operations, a beverage container is contacted with the sanitizing peroxyacid material, typically using a spray device to intimately contact the inside of then (sic) container" Similarly, Richter's Figure is a schematic with no indication of an atomizing nozzle and no indication of atomized particles as claimed. Use of atomized particles as claimed in the present application permits much smaller amounts of sanitizing liquid to be used than a system like Richter's. See the present application at page 3, lines 18-21, for example. Richter obviously is not concerned with such a result, since Richter "floods" the bottle or recirculates sanitizing liquid throughout the system. Nor does Richter make any such reference to minimizing use of sanitizing solution.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

CONCLUSION

In conclusion, pending claims 1-40 are allowable and an early indication of allowance is solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J.D. Ryndak", is written over a horizontal line.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

The claims have been amended as follows.

1. (Amended) A system for sterilizing bottles, said bottles having an interior and exterior surface, comprising:

a source of a liquid sterilizing agent;

means for introducing said sterilizing agent onto the surface of said bottle in the form of discrete atomized liquid particles by contacting the bottle surface with said particles to form at least a thin liquid film thereon, present in sufficient concentration to substantially eliminate microbial contamination on the surface of said bottle after being in contact with said liquid film for a sufficient period of time; and

means for substantially removing said sterilizing agent from said bottle surface after said bottle is [sufficiently sterile] sterilized as desired.

4. (Amended) The system of claim 3 wherein said sterilizing agent is introduced in a supersaturated fog [solution] to promote condensation of said particles onto the bottle surface.

16. (Amended) A method for sterilizing bottles, said bottles having interior and exterior surfaces, comprising:

introducing a sterilizing agent in the form of discrete atomized liquid particles onto the interior bottle surface;

contacting the interior bottle surface with said particles whereby said particles form a thin liquid film on the bottle surface;

maintaining the sterilizing agent on the surface of said bottle for a fixed period of time sufficient to reduce to a desired level the amount of active microorganisms on said surface; and

removing said sterilizing agent from substantially all the interior and exterior surfaces after [so that] said surfaces are sterilized as desired [sufficiently sterile].

19. (Amended) The method of claim 18 wherein said sterilizing agent is introduced in a supersaturated fog [solution] to promote condensation of said particles onto the interior bottle surface.

29. (Amended) An apparatus for sterilizing bottles, said bottles having interior and exterior surfaces, comprising:

a source of a liquid sterilizing agent in the form of atomized liquid particles;

at least one nozzle for introducing said sterilizing agent onto the surface of the bottle in the form of discrete atomized liquid particles by contacting the bottle surface with said particles to form at least a thin liquid film thereon, present in sufficient concentration to substantially eliminate microbial contamination on the surfaces of said bottle in contact with said liquid film; and

a rinsing device for substantially removing said sterilizing agent from said bottle [bottle's] surfaces after said bottle is sterilized as desired [sufficiently sterile].